

captain of the *Scotia*. Captain Robertson has been engaged in Arctic whaling for twenty years, and has made some interesting geographical surveys on the coast of Greenland. In 1892, he took part with the Dundee whaling fleet in an Antarctic voyage, and he is not likely to neglect any opportunity of exploration in the far south. While the captain is in command of the ship, the command of the expedition is in the hands of Mr. Bruce alone, and he is responsible for the plan, which he is free to vary as circumstances may require or suggest, and for the direction of all the scientific work. Mr. Bruce will be supported by a scientific staff of six, including Mr. R. N. Rudmose Brown (son of the late Mr. Robert Brown), as botanist and observer of plankton; Mr. R. C. Mossman, as meteorologist, a choice which ensures the highest efficiency in that department; and Dr. J. H. H. Pirie, as medical officer and geologist. Dr. Pirie has studied oceanic deposits with Sir John Murray and has also had experience of field-work in geology. The zoological work will be shared between Mr. Bruce himself and Mr. Wilton, an old companion on the Jackson-Harmsworth expedition. Two younger men will also go as assistants.

The plan of the expedition is stated to be as follows:—The *Scotia* is to proceed direct to the South Atlantic Ocean, and in the coming Antarctic summer she will go "as far south as is compatible with the attainment of the best results to science." The Scottish station is marked on the map accompanying Mr. Bruce's Belfast paper as in 82° S., 30° W.; but it is explicitly stated that the ship will, if possible, be kept clear of the ice and will not winter in the far south unless that course cannot be avoided. Hence we doubt whether a latitude within many degrees of that designated can be reached. The Antarctic winter of 1903 is to be spent in oceanographical work to the north of the ice-pack, an arduous programme, but one likely to secure very interesting results if the sea is not too rough for working the instruments. If funds permit, a second trip into high latitudes will be made in the following summer. We consider it is extremely important that this should be done. After providing one of the finest Polar ships afloat at great expense and bringing together a singularly competent staff of specialists, it would be most unfortunate not to utilise the opportunity for securing two years' work. In the interests of science we would appeal to those who are generously bearing the cost of this expedition to do a little more, to free Mr. Bruce absolutely from any further anxiety as to expense and leave him no excuse for not reaping fully the harvest of scientific results which lies awaiting him in the field he has succeeded at last in entering.

THE NATURAL HISTORY OF THE THAMES VALLEY.¹

IN a series of pleasantly written and beautifully illustrated articles, a large proportion of which have previously appeared in various serials, such as the *Spectator*, *Country Life*, and the *Badminton Magazine*, Mr. Cornish introduces his readers to a number of interesting facts connected more or less intimately with the valley of the Thames and its tributaries. Indeed, if we may judge by a statement made in the preface, and the evidence afforded by the text itself, few Englishmen can be better acquainted, both from the natural history and the sporting point of view, with the basin of the Thames than the author. In the first chapter we are introduced to the Thames at Sinodun Hill, in the next the manner in which the great river receives its supply of water is discussed, while the shells, plants and insects of the Thames form the subject of the next three chapters.

¹ "The Naturalist on the Thames." By C. J. Cornish. Pp. viii + 260; illustrated. (London: Seeley and Co., Ltd., 1902.) Price 7s. 6d.

Perhaps the author is a little too much dominated with the idea of the great antiquity of fresh water and all its belongings, but this is a small point; and his notes on the variation of colour presented by the Thames Neritina, and the remarkable manner in which these empty shells collect in vast quantities in certain parts of the river-bed are of considerable interest. Indeed, it would be well worth while for some investigator to turn his attention to the manner in which these accumulations of shells are brought together. Several chapters are devoted to fish and fishing, the chub coming in for a special share of attention, and eel-traps being fully described. The two chapters on Wittenham Wood are specially interesting, as showing the numbers of wild mammals to be met with a few years ago in the Thames valley. From the former of these chapters we select, as a sample of the illustrations of the volume, the exquisite photograph of a pair of otters herewith reproduced.

The migratory and resident birds of the district are treated of in a couple of chapters, in the first of which the author states that, as the result of several years' observation, the river serves as the migration route of several species of birds besides swallows. "Sand-martins," he writes, "when beginning the migration, travel down the Thames in small flocks, and sleep each night in different osier-beds. How many stages they make when 'going easy' down the river no one knows. But I have seen the flocks come along just before dusk, straight down stream, and then dropping into an osier-bed." A third chapter describes the birds to be seen on the reservoirs in the valley.

The plants of the Thames valley, other than those of the river itself, receive attention in two chapters, the one treating of various poisonous kinds, while the other describes the flowering species to be met with in the meadows. Nor are economic and agricultural considerations by any means neglected. In one article, for instance, the author gives notes on the different breeds of sheep to be met with in the Thames watershed, while in a second he discourses on watercress and osier-growing. Sporting readers will find much to interest them in the account of netting red deer in Richmond Park, while the lover of picturesque scenery will be delighted alike by the author's descriptions and the photographs by which they are illustrated.

In discursive and chatty writings of this description Mr. Cornish is indeed thoroughly at home, and his book ought to command a large circle of readers who delight in our chief river and its neighbourhood. But in not a few of his chapters the author attempts more ambitious subjects, where in several places he gets sadly out of his depth. For instance, on the very first page we find it gravely stated that "there are in Lake Tanganyika or the rivers of Japan exactly the same kinds of shells as in the Thames." We may take it, charitably, that by the somewhat vague term "kinds" the author means genera and not species. But even then the reference to the molluscan fauna of Tanganyika is a most astounding and unpardonable error. Has the author, we may well ask, never heard of Mr. J. E. S. Moore's famous expedition to that lake, and the shoals of papers that have been written with regard to its so-called "halolimnic" molluscan fauna? It is perfectly true, indeed, that Tanganyika, like other African lakes, contains several widespread genera, such as *Planorbis* and *Paludina* common to the Thames and other freshwaters of Europe and Asia, but in addition to these it is the home of quite a number of peculiar generic, if not family, types of molluscs unknown at the present day anywhere else in the world. And we are told that its shells are exactly the same as those of the Thames!

In describing the freshwater "limpet" (*Ancylus fluviatilis*), the author alludes to it as "shaped like a Phrygian cap." On referring to the plate of "Thames

Shells," facing p. 14, it will be seen that in place of this species the author has actually had figured the marine shell commonly known as *Pileopsis hungaricus*! Nor is this all, for in the same plate an Ampullaria does duty for Paludina (or Vivipara); while instead of the freshwater Thames Neritina we have the marine West Indian *Neritina radiata* depicted. Comment is superfluous!

Neither is Mr. Cornish less unfortunate when, in the chapter on "London's Buried Elephants," he essays to enlighten his readers on the fauna of the Thames valley in Pleistocene times. Passing over his misuse of the term "Prehistoric" as equivalent to "Pleistocene," which in a work of this nature may be regarded as a venial sin, we find on p. 234, in connection with the discovery of mammalian remains during the excavations for the foundations of the Victoria and Albert Museum at South Kensington, the following sentence:—

"So on the London 'veldt' there were lions, wild horses (perhaps striped like zebras), three kinds of

astounding statement is the one relating to the occurrence of the Cape wild, or hunting, dog in the Thames valley deposits. It is true, indeed, that the present writer has ventured to refer, provisionally, a single lower jaw from a cave in Glamorgan to the same *genus* as the animal in question, but that appears to be the only evidence of the former existence in Britain of any representative of the genus *Lycaon*; and we are informed by Mr. Cornish that the Cape *species* once lived in London!

But this is not all, for on p. 235 we find it stated that among the London Pleistocene fauna are included "the pika, a little steppe hare, and an extremely odd antelope now found in Thibet. This is a singularly ugly beast with a high Roman nose, and a wool almost as thick as that of a sheep when the winter coat is on. It must have been quite common in these parts, for I have had two of their horns brought to me during the last few years."

From the second sentence in this quotation it is quite clear that by the "extremely odd antelope" the author means the saiga. That animal, however, is not an inhabitant of Tibet, where it is represented by

its distant cousin the chiru, with which it has evidently been confounded by the author. With reference to the statement that it was formerly common in the Thames valley, we venture to differ from the author. A frontlet has been obtained at Twickenham, and we believe one or two other specimens are known from British deposits, but these are all that have come under the observation of persons competent to decide the affinities of animals represented by fossil bones.

If the two chapters we have been compelled to criticise thus severely have been before the public previously, the repetition of such absurd mis-statements is the more unpardonable.

In his proper sphere Mr. Cornish is an entertaining and pleasant writer, and it is therefore the greater pity that he is so ill-advised as to attempt subjects of which he has no practical knowledge. R. L.

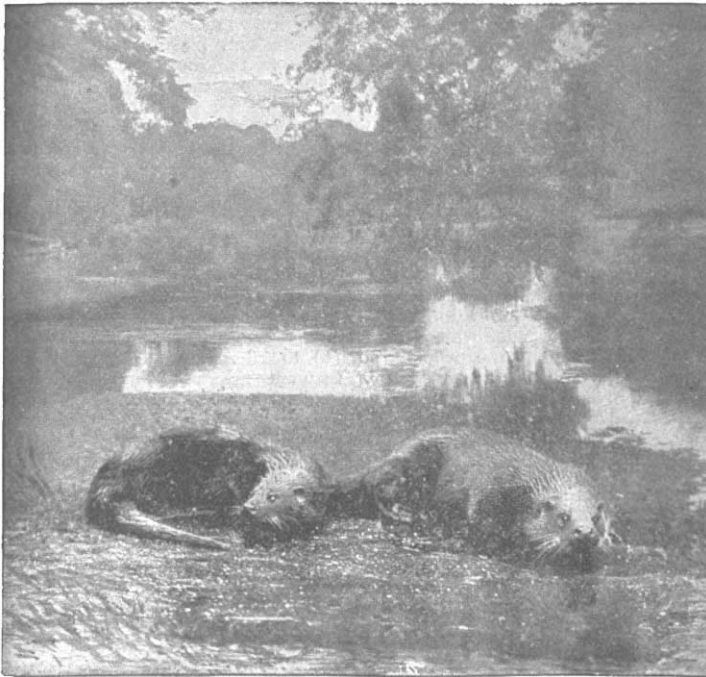


FIG. 1.—Otters.

rhinoceroses—two of which were just like the common black rhinoceros of Africa, though one had a woolly coat—elephants, hyænas, hippopotami, and that most typical African animal, the Cape wild dog!"

The author may well place a note of admiration at the end of this sentence, for it is in truth a most remarkable one. To begin with, Mr. Cornish is apparently unaware that the domesticated horse, with which the Pleistocene race agrees in every particular as regards its skeleton, differs remarkably from the asses and zebras in regard to the proportionate size of the front and hind hoofs; and from this essential difference we are entitled to argue that even in Pleistocene times it was most certainly not striped, such striping as occurs on the legs of certain domesticated horses being probably due to a cross. A certain degree of obscurity veils the part of the sentence referring to the Thames rhinoceroses, but it may be confidently stated that neither was *exactly like* the living African *black* species, while the woolly-coated kind was a relative of the living *white* rhinoceros! But the most

count of the successful efforts made by the Technical Instruction Committee of the City Council, the School Board and other educational authorities to educate Manchester citizens was given in an article published in our issue for January 31, 1901. One cause among many of the high state of development of education in Manchester is the broad view of its duties taken by the Technical Instruction Committee. On several occasions the Committee has arranged for the present principal of the school, Mr. J. H. Reynolds, to visit foreign countries to study other systems of technical instruction. In this way the Manchester educational authorities have become practically acquainted with German and American methods of education, and though they have not slavishly followed these ideas in organising their new school, they have not hesitated to adopt ideas they consider suitable for the peculiar needs of their own district. For the following extracts from Mr. Balfour's speech at the opening of the new school we are indebted to the *Times*.

MR. BALFOUR ON TECHNICAL EDUCATION AT MANCHESTER

AS announced in these columns last week, the Prime Minister opened the new Manchester School of Technology on Wednesday, October 15. For many years past, the provisions for technical education in the city of Manchester have been remarkable for their excellence, and an account of the successful efforts made by the Technical Instruction Committee of the City Council, the School Board and other educational authorities to educate Manchester citizens was given in an article published in our issue for January 31, 1901. One cause among many of the high state of development of education in Manchester is the broad view of its duties taken by the Technical Instruction Committee. On several occasions the Committee has arranged for the present principal of the school, Mr. J. H. Reynolds, to visit foreign countries to study other systems of technical instruction. In this way the Manchester educational authorities have become practically acquainted with German and American methods of education, and though they have not slavishly followed these ideas in organising their new school, they have not hesitated to adopt ideas they consider suitable for the peculiar needs of their own district. For the following extracts from Mr. Balfour's speech at the opening of the new school we are indebted to the *Times*.